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- 5. .> 2001-11-16

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- Composapiens
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- His Fro Ser Cys Leu Gin Ala Leu Giu Pro Gin Ala Val Ser Ser Tyr 5 15
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- %4: Aig Gln Arg Gln Arg Gln Arg Arg Ala Ala Gly Gly Ile leu His 35 $_{\rm 40}$
- 194 Stu leu Leu Mai Ala Mai Gly Pro Asp Val Phe Gin Ala His Gin
- Now Asp Thi Glu Ary Tyr Mai Lou Thr Ash Leu Ash lie Gly Ala Glu To

ing leg Arg Asp Pro Ser leg Gly Ala Glm Phe Arg Mai His leg Mai 90 95

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Jun 1844 Thi Gar Gar 1844 1844 Ser Val Cys Gly 1rp Ser Gim Thr 138 440 125

Ash Pro Glu Asp Asp Thr Asp Pro Gly His Ala Asp Leu Mal Leu Tyr 135

The Thr Arg The Asp Teu Glu Leu Pro Asp Gly Ash Ard Gln Val Ard 185

Gly Wal Thr Gln Leu Gly Gly Ala Cys Ser Pro Thr Trp Ser Cys Leu 175

The The Glu Asp The Gly Phe Asp Leu Gly Val The Ile Ala His Glu 195 - 19

The Gly His Ser Phe Gly Leu Glu His Asp Gly Ala Pro Gly Ser Gly 195 205

Uys Gly Pro Ser Gly His Val Met Ala Ser Asp Gly Ala Ala Pro Arg 215 220

ALL Gly Leu Ala Trp Ser Pro Cys Ser Arg Arg Gln Leu Leu Ser Leu 185 - 237 - 235 - 241

Lea Arg

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William DNA

117 Homo sapiens

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0213) homo sapiens

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Wer Ser Cys Ser Arg Leu Leu Val Pro Leu Leu Asp Gly Thr Glu Cys 25 35

Ny Mal Glu lys Tip Cys Ser Lys Gly Arg Cys Arg Ser Leu Mal Glæ 35 4. 45

Leu Tor Pro Ile Ala Ala Val His Gly Arg Trp Ser Ser Trp Gly Pro 50 50 60

And Ser Pro Cys Ser Ang Ser Cys Gly Gly Gly Val Val The Ang Ang 80

Arg Gln Cys Asn Asn Pro Arg Pro Ala Phe Gly Gly Arg Ala Cys Val 85 90 95

Dur Olm Leu Glu Phe Met Ser Glm Olm Cys Ala Arg Thr Asp Gly Glm 115 125

itt leu Arg Ser Ser Pro Gly Gly Ala Ser Phe Tyr His Trp Gly Ala 13. 147

Al. Mal Pro H.a Set Glm Gly Asp Ala Leu Cys Arg His Met Cys Arg 18:

Ala lle Gly Glu Ser Phe Ile Met Lys Arg Gly Asp Ser Phe Leu Asp 165 173 3.9 Thr Arg Cys Met Pro Ser Gly Pro Arg Glu Asp Gly Thr Leu Ser 185 191

Let Dys Val Ser Gly Ser Cys Arg Thr Bhe Gly Cys Asp Gly Arg Met 195 205

Asp Ser Gin Gin Val Trp Asp Arg Cys Gin Val Cys Gly Gly Asp Asn 225

Ser Thr Cys Ser Pro Arg Tys Gly Ser Phe Thr Ala Gly Arg Ala Arg 201 235 240

Slu Tyr Val Thr Phe Leu Thr Val Thr Pro Ash Leu Thr Ser Val Tyr 245 255

The Ala Ash His Arg Pro Leu Phe Thr His Leu Ala Val Arg Ile Gly 265 270

Gly Arg Tyr Val Val Ala Gly Lys Met Ser Ile Ser Pro Asn Thr Thr 275 280 285

Tyr Pro Ser Leu Leu Glu Asp Gly Arg Val Glu Tyr Arg Val Ala Leu 290 295 380

Thi Glu Asp Arg Leu Pro Arg Leu Glu Glu Ile Arg Ile Trp Gly Pro 315 310 320

Leu Glm Glu Asp Ala Asp Ile Glm Val Gly Gly Val Arg Ala Glm Leu 325 330 335

Met His Ile Ser Trp Trp Ser Arg Pro Gly Leu Gly Glu Arg Asp Leu 345

Cys Ala Arg Gly Arg Trp Pro Gly Gly Ser Ser Asp Xaa 355 360 365

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TOUR PRI

%0.3> homo sapien

4.12.5

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- S023> unknown amino adid
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- Ser Gly His Val Met Ala Ser Glu Arg Arg Arg Pro Ala Pro Ala Ser 20 25 30
- Fig. 31y Pro Pro Ala Ala Ala Gly Ser Cys Xaa Ala Cys Ser Asp Pro 35 $^{-45}$
- Ger Leu Ard Ard Ard Ser Leu Cys Tip Fro Fro Thi Ser Ala Pro Alu 51 6.
- Fly Ala Leu Mal Leu Mal Pro Ala Lys Set Arg Leu Deu Mal Gly Gly \mathbb{R}^n

Assa Sty Arg Old led Led Ind Pro led Thr Lys Oly His Ata Ser Lys

And The His Pro Arg Ala His Ser Ser Wal Pro Pro Pro Pro Gly Wal 195

His Pro Gly Thr G.u Pro Gly Leu Ser Arg Ala Leu Ser Glm Arg Met 115 126

Thr Gly Ala Leu Val Trp Asp Pro Pro Arg Pro Glm Pro Gly Ser Ala 135

Gly His Fro Arg Ash Ala His Leu Gly Leu Tyr Tyr Ser Ala Ash Glu 14" 155 155

31n Jys Arg Val Ala Phe Gly Pro Lys Ala Val Ala Cys Thr Phe Ala 165 173

Arg Glu His Leu Val Ser Leu Pro Ala Val Ala Trp Asp Trp Leu Maa 183 - 190

GLy Pro Ser Ala Ser Pro Ser Ser Arg Pro Pro Lys Arg Ala Trp Ile 195 200 205

Cys Ala Arg Pro Ser Pro Ala Thr Gln Thr Arg Trp Thr Lys Ala Ala

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Arg Ser Gly Ala Fro Arg Val Ala Ala Ala Pro Trp Trp Ser Xaa Pro 245 250 250

Pro Maa Gln Gln Cys Met Gly Ala Gly Leu Ala Gly Val Pro Glu Val 265 273

leu Ala Pro Ala Pro Ala Glu Glu Val Trp Ser Pro Gly Gly Ser 275 283

Ala Thr Thr Pro Asp Leu Pro Leu Gly Gly Val His Val Leu Val Lau 29° 295

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- His Thr All Lys Gly Met Leu Cys Ala Asp Thr Cys Ala Gly Fro Leu 355 361 365
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- Fly Mal Cys Gln Mal Ala Pro Gly Arg Thr Gly Pro Maa Ala Cys Mal
- Ger Arg Tyr Gly Thr Gly Ala Arg Gys Val Val Gly Thr Thr Ala Arg 425 430
- Ala Ala His Gly Arg Ala Leu Ser Gln Leu Ala Glu Arg Glu Asn Mat 435 \$441\$
- Ser Arg Phe Xaa Sin Leu Pro Pro Thr Xaa Pro Val Ser Thr Leu Pro 455 460
- In: Thr Gly Leu Ser Ser His Thr Trp Arg Maa Gly Ser Glu Gly Ala 400 $$470^{\circ}$$
- Met Ser Trp Leu Gly Arg Kaa Ala Ser Pro Leu Thr Pro Pro Thr Pro 485 495
- Fig Set Trp Arg Met Mal Mal Ser Ser Thr Glu Trp Fro Ser Pro Arg 500 510
- Inr Gly Cys Pro Ala Trp Arg Arg Ser Ala Ser Gly Asp Pro Ser Arg 515 525
- Lys Met Led Thr Ser Arg Trp Glu Val Ser Glu Fro Ser Ser Cys Thr 535 540
- Set Ala Gly Gly Ala Gly Leu Ala Leu Glu Ash Glu Thr Cys Val Pro 54

Gly Ala Asp Gly Leu Glu Ala Pro Mal Thr Glu Gly Pro Gly Ser Mal 865 - 875

Asp Glu Lys Leu Fro Ala Fro Glu Pro Cys Vai Gly Met Ser Cys Pro 585 590

Fro Gly Trp Gly His Leu Asp Ala Thr Ser Ala Gly Glu Lys Ala Pro 595 600 605

Ser Pro Trp Gly Ser Ile Arg Thr Gly Ala Gln Ala Ala His Val Trp 610 620

The Pro Ala Ala Gly Ser Cys Ser Mal Ser Cys Gly Ard Gly Led Met (2) 635 635

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Glu Glu Leu Cys Gly Leu Ala Ser Lys Pro Gly Ser Arg Arg Glu Mai 661 671

Cys Gln Ala Mal Pro Cys Pro Ala Arg Trp Gln Tyr Lys Leu Ala Ala 675 680 685

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<!!!!> homo sapien;

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Tyr Leu Ser Pro Gly Ala Pro Leu lys Gly Arg Pro Pro Ser Pro Gly 50 55

Fhe Glm Arg Glm Arg Glm Arg Glm Arg Arg Ala Ala Gly Gly Ile leu 65 75 80

His Leu Glu Leu Leu Val Ala Val Gly Pro Asp Val Phe Gln Ala His 95 95

Fin Glu Asp Thr Glu Arg Tyr Val Leu Thr Ash Leu Ash Ile Gly Ala 30u Neu Teu Aru Asp Pro Ser Leu Gly Ala Gln Phe Arg Mai His Leu 115 - 120 - 125 Uki Lys Met Val Ile Leu Thr Slu Pro Glu Gly Ala Pro Asn Ile Thi 135 140 Ala Ash leu Thr Ser Ser Leu Leu Ser Mal Cys Gly Top Ser Glh Thr $148 \,$ 1 - Asn Fri Glu Asp Asp Thr Asp Pro Gly His Ala Asp Leu Mal Leu 188 Ty: The Thr Arg Phe Asp Leu Glu Leu Pro Asp Gly Ash Arg Gln Val Ang Guy Mai The Gin Leu Gly Gly Ala Cys Ser Pro Thr Trp Ser Cys 195 205 Leu Ile Thr Glu Asp Thr Gly Phe Asp Leu Gly Val Thr Ile Ala His 213 220 Glu Ile Gly His Ser Phe Gly Leu Glu His Asp Gly Ala Pro Gly Ser 235 235 U.y Cys Gly Pro Ser Gly His Wal Met Ala Ser Asp Gly Ala Ala Pro 245 250 255 Arg Ala Gly Leu Ala Trp Ser Pro Cys Ser Arg Arg Gln Leu Leu Ser 265 270 Leu Leu Ser Ala Gly Arg Ala Arg Cys Val Trp Asp Pro Pro Arg Pro 275 285 Fin Pro Gly Ser Ala Gly His Pro Pro Asp Ala Gln Pro Gly Leu Tyr Tyr Ser Ala Ash Glu Glh Cys Arg Val Ala Phe Gly Pro Lys Ala Val

A.4 Gys Thr The Ala Arg Glu His Leu Asp Met Gys Gln Ala Leu Ser 325 \$33%

dys His Thr Asp Fro Teu Asp Gln Ser Ser Cys Ser Adg Leu Leu Mal 345 ers led hed Asp Gly Thr Gld Cys Gly Val Gld Lys Top Cys Ser Lys 355 365 Oly Arg Cys Arg Ser Leu Mal Glu Leu Thr Pro Ile Ala Ala Mal His 373 375 380 GLY Arg Trp Ser Ser Trp Gly Pro Arg Ser Pro Cys Ser Arg Ser Cys Gly Gly Gly Val Val Thr Ard Ard Ard Gln Cys Asn Asn Pro Ard Pro 405 - 415 -Ala Phe Gly Gly Arg Ala Cys Val Gly Ala Asp Leu Glm Ala Glu Met 425 431 dys Asn Thr Gln Ala dys Glu Lys Thr Gln Leu Glu Phe Met Ser Gln 135 445 Gin Cys Ala Arg Thr Asp Gly Gln Pro Leu Arg Ser Ser Pro Gly Gly 450 455 Als Ser Phe Tyr His Trp Gly Ala Ala Val Pro His Ser Gln Gly Asp 480 Ala Leu Dys Arg His Met Cys Arg Ala Ile Gly Glu Ser Phe Ile Met 485 $\,$ 490 $\,$ 495 $\,$ Lys Arg Gly Asp Ser Phe Leu Asp Gly Thr Arg Dys Met Prc Ser Gly 500 500 Ero Arg Slu Asp Gly Thr Leu Ser Leu Cys Mal Ser Gly Ser Cys Arg 515 520 525 Thr Phe Gly Cys Asp Gly Arg Met Asp Ser 3ln 3ln Val Trr Asp Arg 530 535 540 Cys Gln Val Cys Gly Gly Asp Asn Ser Thr Cys Ser Pro Arg Lys Gly Ser Phe Thr Ala Gly Arg Ala Arg Glu Tyr Val Thr Phe Leu Thr Val 565 570 575

In: Pro Ash Deu Thr Ser Val Tyr Ile Ala Ash His Arg Bro Leu Phe 880 - 880 The His led Ala Val Arg Ile Gly Gly Arg Tyr Val Val Ala Gly lys 595 600 600 Met Ser Ile Ser Pro Asn Thr Thr Tyr Pro Ser Leu Leu Glu Asp Gly 61. Arg Mal Glu Tyr Arg Mal Ala Leu Thr Glu Asp Arg Leu Pro Arg Leu 825 835 64' Glootle Arg Tie Trp Gly Pro Leu Gln Glu Asp Ala Asp Ile Gln 650 655 Tal Tyr Arg Arg Tyr Gly Glu Glu Tyr Gly Ash Leu Thr Arg Pro Asp 661 671 13e Thr Phe Thr Tyr Phe Gln Pro Lys Pro Arg Gln Ala Trp Val Trp 675 680 Ala Ala Val Arg Gly Pro Cys Ser Val Ser Cys Gly Ala Gly Leu Arg 690 690 700 Trp Val Ash Tyr Ser Cys Lou Asp 3lh Ala Arg Lys Glu Leu Val Glu 715 - 720 Thr Val Gln Cys Gln Gly Ser Gln Gln Pro Pro Ala Trp Pro Glu Ala 725 Cys Mai led Glu Pro Cys Pro Pro Tyr Trp Ala Mai Gly Asp Phe Gly 745 Fro Cys Ser Ala Ser Cys Gly Gly Gly Leu Arg Glu Arg Pro Val Arg 755 760 765 Cys Val Glu Ala Gln Gly Ser Leu Leu Lys Thr Leu Pro Pro Ala Arg Cys Arg Ala Gly Ala Gln Gln Pro Ala Val Ala Leu Glu Thr Cys Asn Tel TB5 8...

Fro Glm Fro Cys Fro Ala Arg Trp Glu Val Ser Glu Pro Ser Ser Cys

- Thr Ser Ala Gly Gly Ala Gly Leu Ala Leu Glu Ash Glu Thr Cys Mal
- Ero Bly Ala Asp Gly Leu Glu Ala Pro Val Thr Glu Gly Pro Gly Ser 835
- Mal Asp Glu Lys Leu Pro Ala Pro Glu Pro Cys Mal Gly Met Ser Cys 851 860
- Eve Pro Gly Trp Gly Hos Leu Asp Ala Thr Ser Ala Gly Glu Lys Ala 808 875 875
- Fig Ser Dro Trp Gly Ser The Arg Thr Gly Ala Gln Ala Ala His Wal
- Trp Thr Pro Ala Ala Gly Ser Cys Ser Val Ser Cys Gly Arg Gly Leu 905 910
- Met Glu Leu Arg Phe Leu Cys Met Asp Ser Ala Leu Arg Val Pro Val 915 921
- Glm Glu Glu Leu Cys Gly Leu Ala Ser Lys Pro Gly Ser Arg Arg Glu 935 940
- Ual Cys Gin Ala Val Pro Cys Pro Ala Arg Trp Gin Tyr Lys Leu Ala 945 950 950
- Ala Cys Ser Val Ser Cys Gly Arg Gly Val Val Arg Arg Ile Leu Tyr 965 970 975
- Cys Ala Arg Ala His Gly Glu Asp Asp Gly Glu Glu Ile Leu Leu Asp 985 990
- The Glm Cys Glm Gly Leu Pro Arg Pro Glu Pro Glm Glu Ala Cys Ser 998 1995
- Lou Glu Pro Cys Pro Pro Arg Trp Lys Val Met Ser Leu Gly Pro 1011 1020
- Jyk Ser Ala Ser Cys Gly Leu Gly Thr Ala Arg Arg Ser Mal Ala 1988 - 1985
- Cys Val Glm Leu Asp Glm Gly Glm Asp Val Glu Val Asp Glu Ala 1040 1050

Ala Cys Ala Ala Leu Mai Arg Pro Glu Ala Ser Mal Pro Cys Leu Ile Ala Asp Cys Thr Tyr Arg Trp His Val Gly Thr Trp Met Glu 1000 1005 Tys Ser Mai Ser Cys Gly Asp Gly Ile Gin Arg Arg Arg Asp Thr 1885 1898 Jys Leu Gly Fro Glm Ala Glm Ala Fro Val Pro Ala Asp Phe Gys 1110 Oln His Teu Pro Lys Pro Val Thr Val Arg Gly Cys Trp Ala Gly Fro Cys Mal Gly Gln Gly Thr Pro Ser Leu Mal Pro His Glu Glu 113. Ala Ala Pro Gly Arg Thr Thr Ala Thr Pro Ala Gly Ala Ser 1145 1150 1155 leu Glu Trp Ser Gln Ala Arg Gly Leu Leu Phe Ser Pro Ala Pro 1160 1160 1170 11**6**5 Sin Pro Arg Arg Leu Leu Pro Gly Pro Sin Glu Asn Ser Val Gin 1175 1185 Ser Ser Ala Cys Gly Arg Glm His Leu Glu Pro Thr Gly Thr 11e 119: 1200 Asp Met Arg Gly Pro Gly Glm Ala Asp Cys Ala Val Ala Ile Gly 1205 1210 1215 Arg Pro Leu Gly Glu Val Val Thr Leu Arg Val Leu Glu Ser Ser 1220 1230 Leu Asn Cys Ser Ala Gly Asp Met Leu Leu Leu Trp Gly Arg Leu 1235 1240 1245 Onr Orp Arg Lys Met Cys Arg Lys Leu Leu Asp Met Thr The Ser 125 1260 Ser Lys Thr Ash Thr Leu Val Val Arg Glm Arg Cys Gly Arg Pro 1265 1275

Gay Gly Mai Led Led Arg Tyr Gly Ser Glm Led Ala Fro Glu 1285 - 1285 In: Phe Tyr Arg Glu Cys Asp Met Gln Leu Phe Gly Pro Trp Gly 1295 1300 012 lie Mal Ser Pro Ser Leu Ser Pro Ala Thr Ser Ash Ala Gly 1315 1324 1315 GLY Cys Arg Leu Phe Ile Asn Val Ala Pro His Ala Arg Ile Ala 1825 - 1831 - 1835 The His Ala Leu Ala Thr Ash Met Sly Ala Sly Thr Slu Sly Ala .34. 1345 1357 Aug Ala Ser Tyr 1.6 Leu Ile Arg Asp Thr His Ser Leu Arg Thr 1866 1866 The Ala Phe His Gly Glm Glm Val Leu Tyr Trp Glu Ser Glu Ser 1375 1385 Se: Gln Ala Glu Met Glu Phe Ser Glu Gly Phe Leu Lys Ala Gln 1395 Ala Ser Leu Arg Gly Gln Tyr Trp Thr Leu Gln Ser Trp Val Pro 1400 1400 1400 Glu Met Gln Asp Pro Gln Ser Trp Lys Gly Lys Glu Gly Thr 1415 1420 1425